

# ***EKB500***

## **UNIVERSAL KEYBOARD**

FW1.4



## SAFETY WARNINGS

- Do not place the device near to heaters, furnaces, other heat sources or under direct solar irradiation.
- Operate the device only in locations providing the tolerable operating temperature range 0°C~40°C.
- For cleaning, make sure the device is plugged off and only use a damp cloth without acid detergent.
- Install the device only in dry and dustproof surroundings. Protect the device against any liquid's penetration.
- Avoid the penetration of any artefacts, e.g. through ventilation slots.
- Do not open the device yourself. In case of malfunction, contact your local installer or dealer. Unauthorized opening of the device will annul the warranty claim!
- Use the device only for purposes described in this manual.
- Operate the device only with the power source indicated in the technical data.



**ATTENTION!** This is a class A product which may cause radio interference in a domestic environment; in this case, the user may be urged to take adequate measures.



This equipment has been tested and found to comply to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful

interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.



This Product is RoHS compliant.

WEEE



Your EverFocus product is designed and manufactured with high quality materials and components which can be recycled and reused. This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste. Please, dispose of this equipment at your local community waste collection/recycling centre. In the European Union there are separate collection systems for used electrical and electronic product. Please, help us to conserve the environment we live in!

Ihr EverFocus Produkt wurde entwickelt und hergestellt mit qualitativ hochwertigen Materialien und Komponenten, die recycelt und wieder verwendet werden können. Dieses Symbol bedeutet, dass elektrische und elektronische Geräte am Ende ihrer Nutzungsdauer vom Hausmüll getrennt entsorgt werden sollen. Bitte entsorgen Sie dieses Gerät bei Ihrer örtlichen kommunalen Sammelstelle oder im Recycling Centre. Helfen Sie uns bitte, die Umwelt zu erhalten, in der wir leben.

The information in this manual was current upon publication. The manufacturer reserves the right to revise and improve his products. Therefore, all specifications are subject to change without prior notice. Misprints reserved. Please read this manual carefully before installing and using this unit. Be sure to keep it handy for later reference.

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## 1. INTRODUCTION

The EKB 500 universal keyboard was developed for both DVR remote control and telemetry control of speed domes and telemetry receivers.

Ergonomic key alignment and the integrated jog/shuttle allow the convenient EverFocus DVR operation.

2 independent RS-485 interfaces enable installations with different telemetry protocols.

## 2. FEATURES

- 2 independent loop-through RS-485 ports, programmable with different protocols
- Protocol types: EverFocus, ED2200/2250 (Samsung Electr.), Pelco-D, Pelco-P
- 3-axis joystick for convenient pan / tilt / zoom control
- Jog/Shuttle and separate keypad for DVR control
- Housing allows countersunk installation
- Integrated doublespaced LCD display

## 3. COMPATIBLE DEVICES

### **Digital video recorders:**

EverFocus EDR410 / 810 / 910 / 920 / 1610/ 1640

EverFocus EDSR100H / 100M / 400 / 600 / 900 /1600

### **Speed dome cameras:**

EverFocus EPTZ500 / 1000 / 3000 / 3500

EverFocus ED2200 / 2250

Samsung Electronics SCC641 / 643 / 6405

VProtect VPTZ series

Pelco-D compatible devices

Pelco-P compatible devices

## 4. DELIVERY SCOPE

1 x EKB-500 universal keyboard

1 x 12 VDC power supply

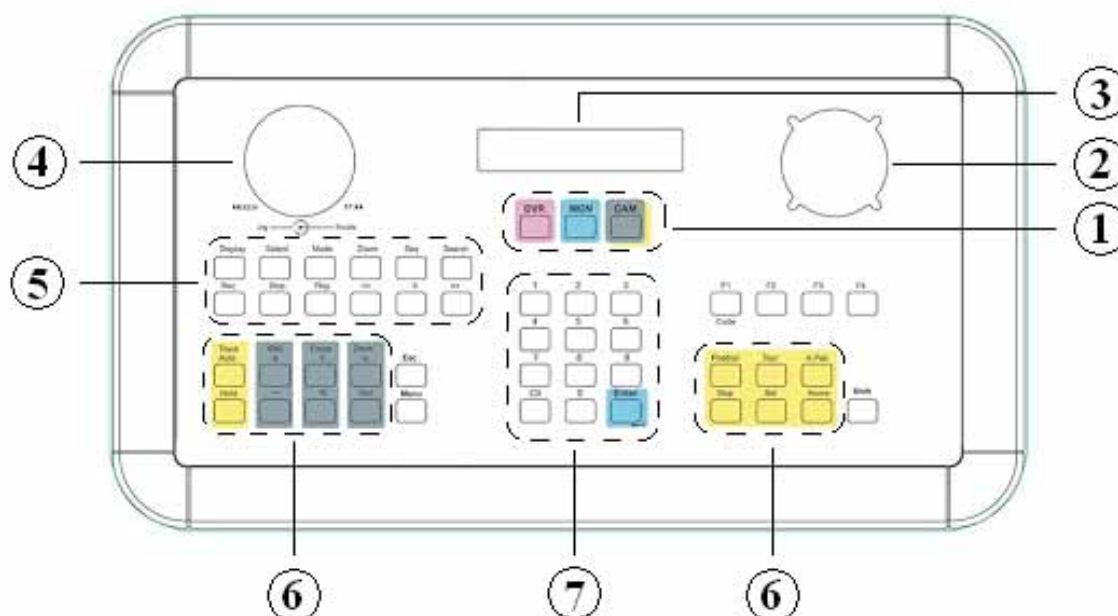
1 x RJ-45 connector, 120 Ohm terminated

1 x RS-485 connection kit incl. connector box and 1 m connection cable

1 x manual

1 x packaging

## 5. OPERATING ELEMENTS



### 1. DVR, MON, CAM

Operation mode toggle key:

**DVR:** DVR and DVR main monitor control

**MON:** DVR call and matrix monitor control

**CAM:** Camera control on call and matrix monitors, telemetry control switching

### 2. 3-axis joystick

Joystick for speed dome and telemetry receiver control

### 3. LCD display

Doublespaced LCD display for status message display

### 4. Jog / Shuttle

Operating facility for playback and DVR menu control.

### 5. DVR control keys

### 6. Speed dome and telemetry receiver control keys

### 7. Numeric keypad, CLR, ENTER

0 ~ 9: Numeric keypad for numeric entries

**Clr:** Toggle key for speed dome menu termination

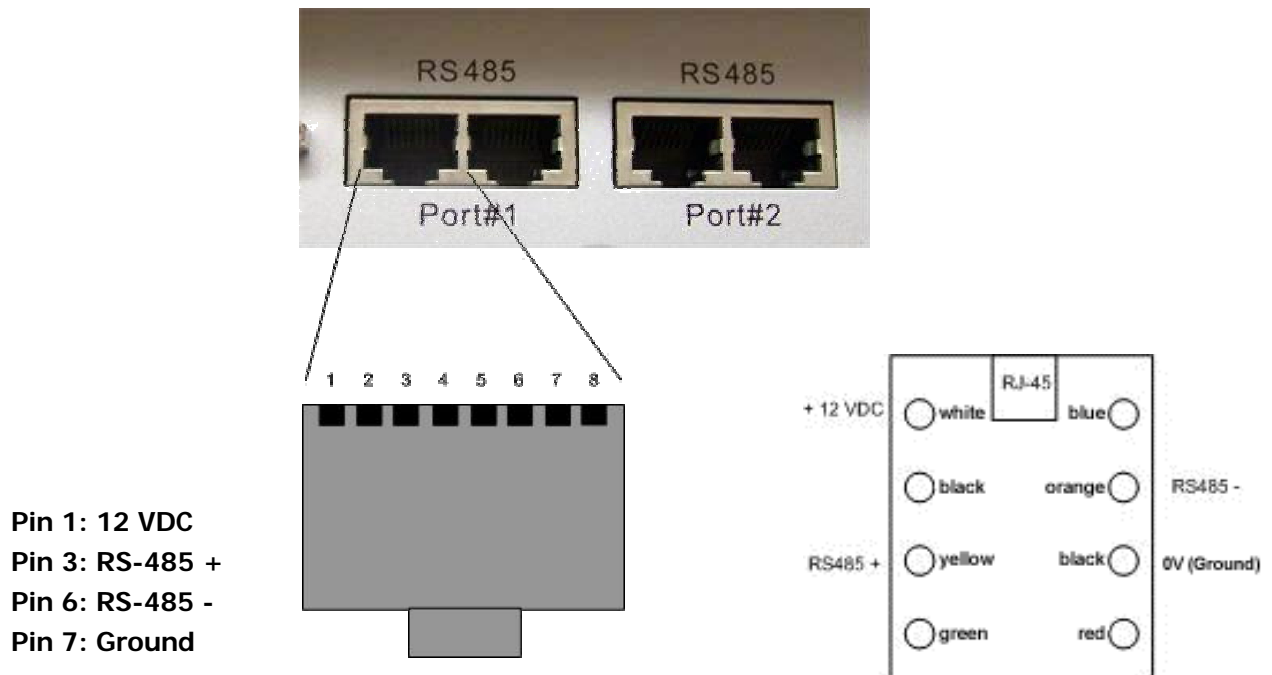
**Enter:** Enter key for input confirmation.

## 6. KEYBOARD CONNECTORS

### RS-485 ports

EKB-500 provides two independent RS-485 ports with 2 RJ-45 plugs each (loop-through).

Pin assignment:



Pin assignment RJ-45 connector  
connector box

Delivery comprises a connector box for RS-485 and 12 VDC power supply connection enabling power supply connection either directly to the EKB 500 keyboard or through the connector box.

### RS-232 connector

The 9-pin Sub-D connector is used for service purposes, e.g. keyboard update with new firmware.

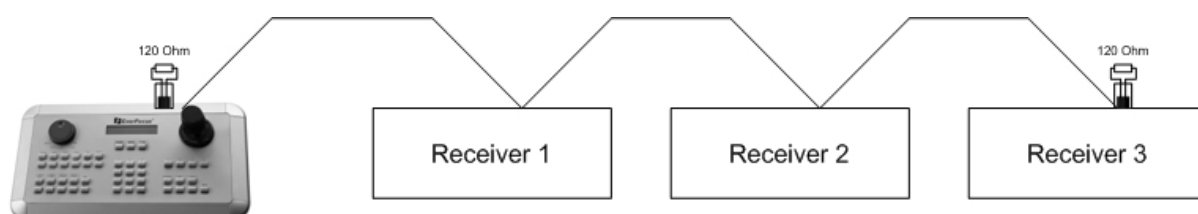
### POWER CONNECTOR

Use the 5,5 mm socket for connecting the 12 VDC power supply. The power supply may be installed either through this socket or through the included connector box.

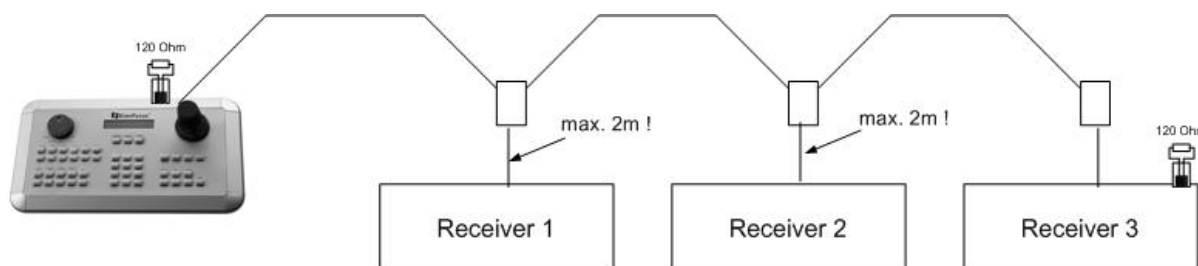
## 7. INSTALLATION

### 7.1. General RS-485 bus installation

EKB 500 uses a RS-485 simplex wiring; the signal is transferred via a single twisted pair line. CAT5 network cable is recommended, UTP version (unshielded) is sufficient for normal application. A shielded cable should be used if the installed cables are expected to be highly susceptible to interferences. The number of devices installed in one bus is limited to 32 (expandable through signal distributors), while max. 8 EKB 500 keyboards may be installed in one system. Basically, the bus should be created by serial wiring.

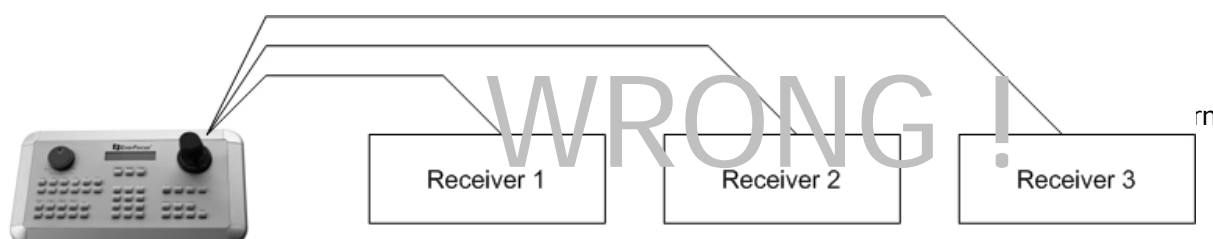


Maximum RS-485 bus cable length is 1200 m.



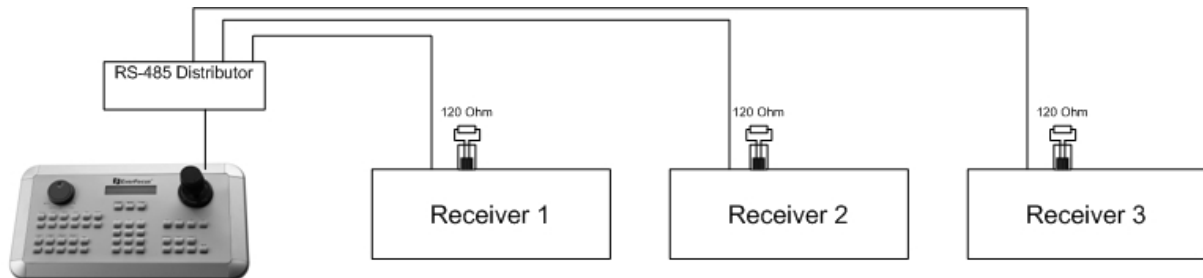
Maximum cable length from box to device is 2m using connector boxes (e.g. EDA-998).

Star wiring is permitted only with signal distributors.



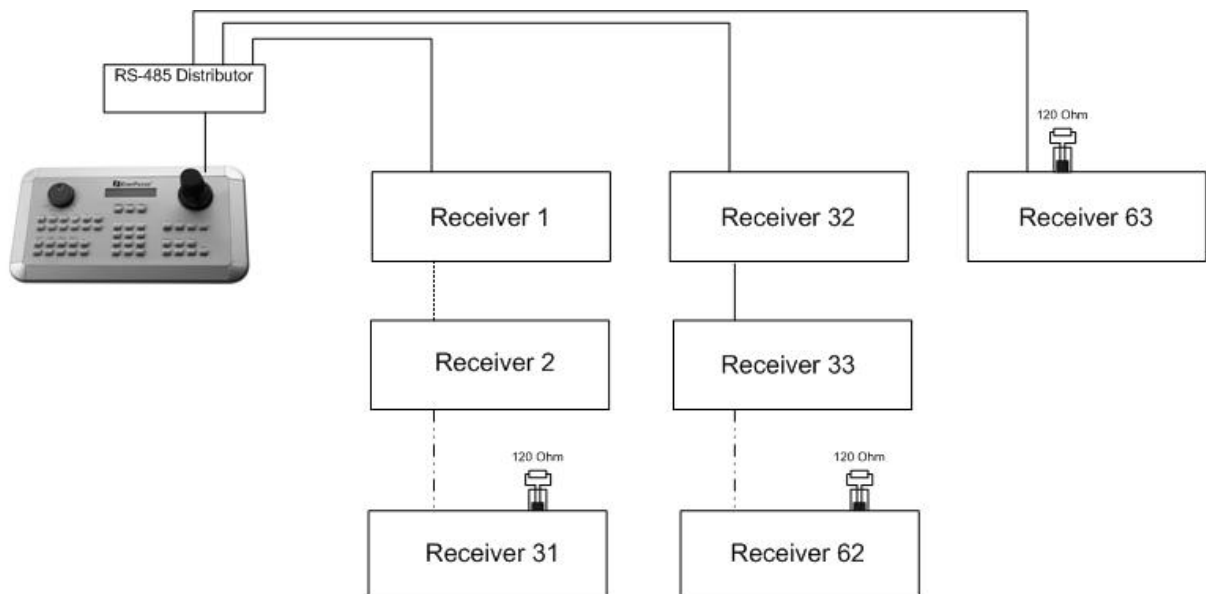


RS-485 signal distributors EDA-997A may be used for star wiring. The maximum system cable length can also be expanded by using these distributors, physically providing a new RS-485 bus with 1200 m cable length each at every distributor output.



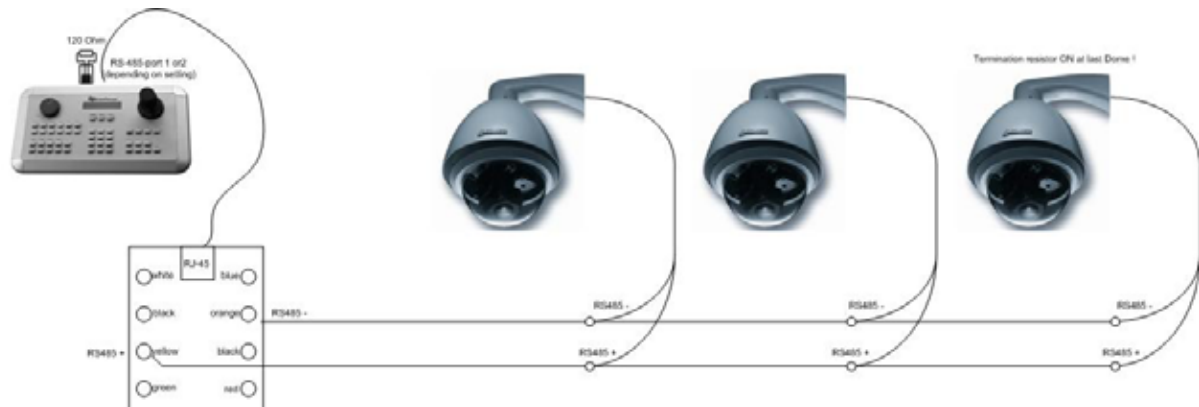
In case the maximum number of 32 bus participants is exceeded, the number of connected devices can be increased by using RS-485 distributors. Each distributor output physically provides one RS-485 bus which enables the additional connection of 31 further devices (the distributor output represents one bus participant itself).

The maximum system expandability depends on the RS-485 address range of the installed devices.



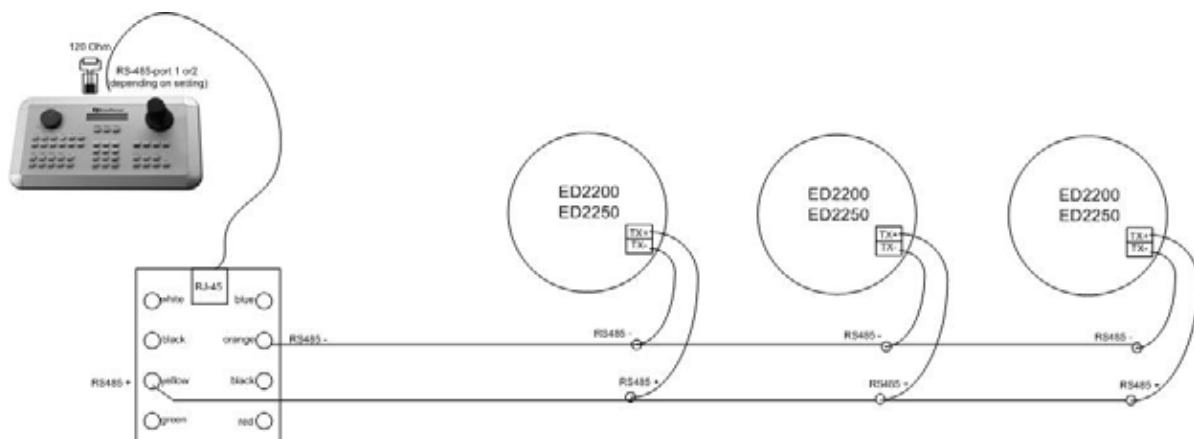
**Attention:** The RS-485 signal distributor EDA997A is unidirectional! This means that the signal only flows from the input towards the outputs. Therefore, e.g. the interconnection of several EKB 500 keyboards is not possible with this signal distributor!

## 7.2. EPTZ 500 / 1000 / 3000 / 3500 Speed dome camera connection



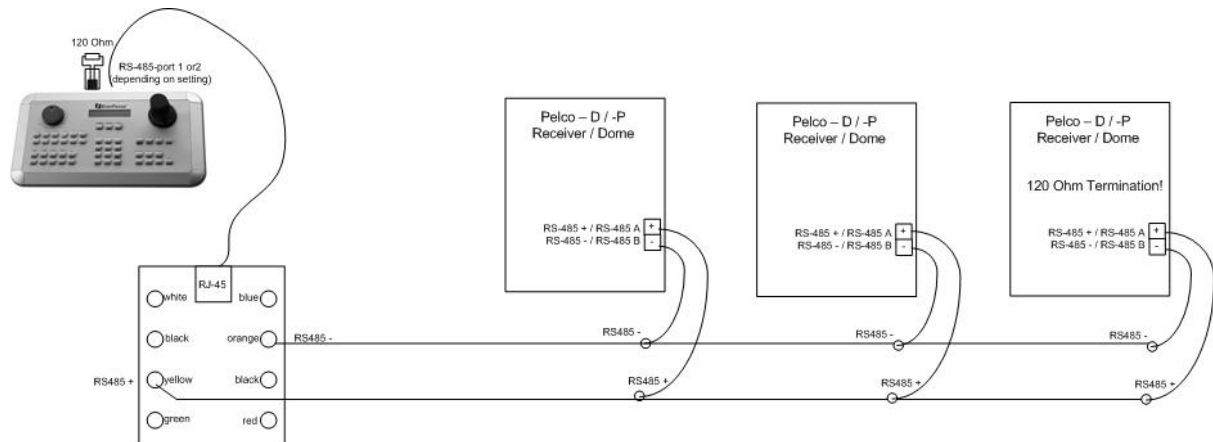
Applied protocol type: EVF2 (standard)

## 7.3 ED-2200, ED-2250, Samsung SCC-641, SCC-643 , SCC-6405 connection



Applied protocol type: A-Type

## 7.4. Connection of Pelco-D / -P protocol-compatible devices



Basic functions of speed domes and telemetry receivers compatible to Pelco-D / -P protocol can be controlled with the EKB 500 keyboard if a simplex RS-485 connection option is provided. For general connection, please refer to the chart illustrated above.

Applied protocol type: Pelco-D / Pelco-P (in accordance with dome / receiver)

**ATTENTION:** Some Pelco-D / -P protocol domes and receivers require an address offset of -1 at the keyboard, i.e. the address assigned to the dome / receiver in the EKB 500 menu must be 1 below the address set in the dome / receiver itself!

## 7.5 EDSR / EDR series' DVR connection

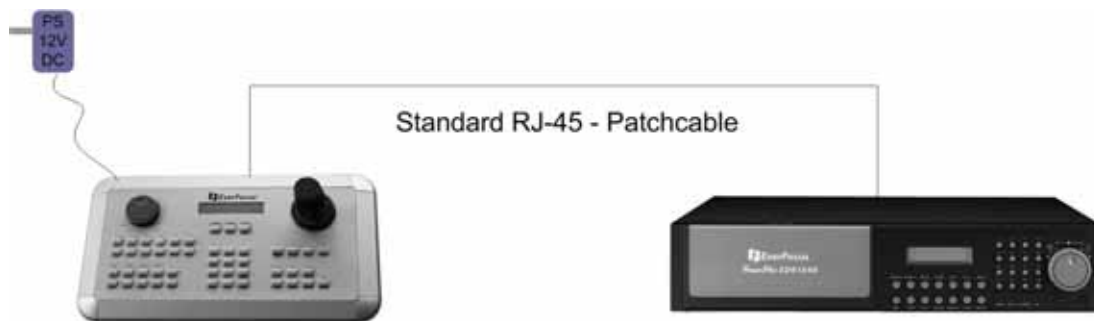
The EKB 500 keyboard can control the following digital video recorders:

EDSR series (despite EDSR100 19" model)

EDR-410/810/920/1640 (MPEG-4 series)

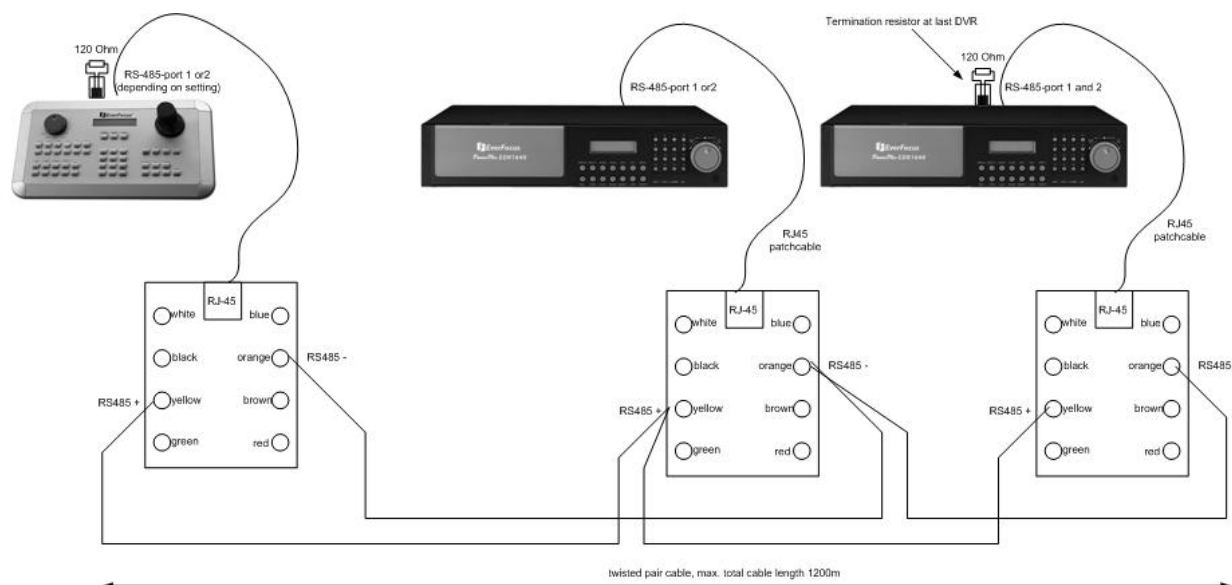
### Installation with standard network cable:

For short distances, EKB 500 can directly be connected using a standard network cable (patch cable, uncrossed!).



### Connection with EDA998 connector kit:

Place the EDA998 connector kit at the RS-485 bus for easy DVR installation.



## System settings required for start-up:

### DVR:

MENU > RS232/RS485:

RS485

BAUDRATE	9600 BPS	>	Baud rate must be the same as baud rate of the respective EKB 500 port (default setting for both keyboard and DVR is 9600)
----------	----------	---	--

STOPBIT	1
PARITY	NONE

DATABIT	8		
RS232/RS485 ID	1	>	RS-485 address must correspond to DVR setting in EKB 500 menu

**EKB-500: (for details, please refer to "8. Menu settings")**

### DVR setting:

**MENU ("SHIFT" + "MENU" key) > DEVICE SETTING > DVR SETTING:**

**DVR NAME:** Selectable DVR number (independent of RS-485 address)

**RS485 CONNECTED TO PORT: \_ :** RS-485 port to which the DVR is connected (1 or 2)

**RS485 Address:** DVR RS-485 address  
(complies with DVR menu "RS232/RS485 ID")  
Must be in accordance with DVR setting

**DVR xxxx changed**  
**[ENT] to save** Press **ENTER** key to confirm the settings

**MENU > COM PORT SETTING:**

**Port:\_ (1 or 2)** Enter the RS-485 port to which the DVR is connected (1 or 2)

**Input the Port**

**BAUD: 9600<** Baud rate setting (according to DVR)

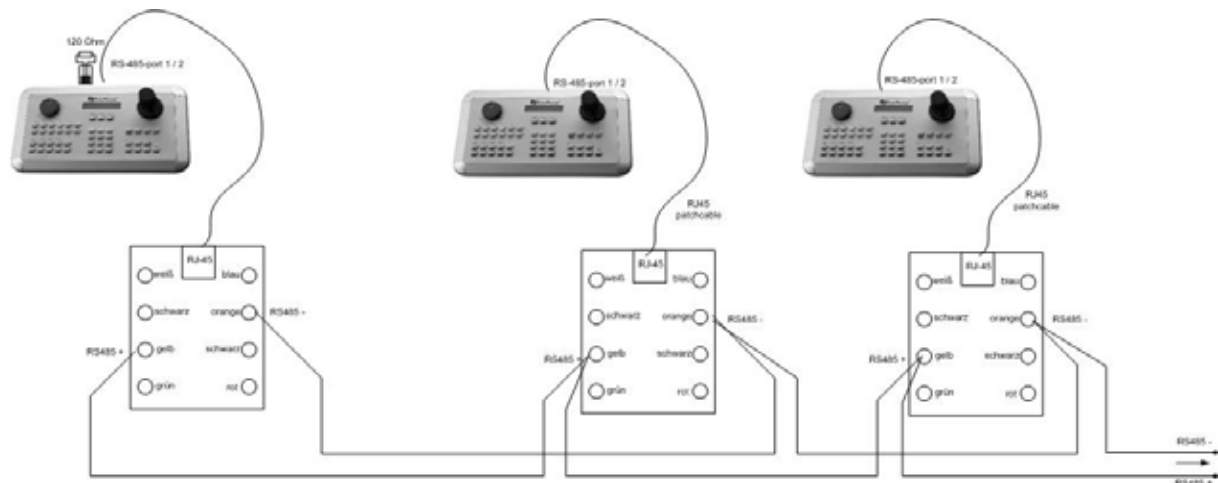
**Protocol: EFV1** Protocol type, setting irrelevant for DVR control > **ENTER**

**Port: 1 Changed**  
**[ENT] to save** Press **ENTER** key to confirm the settings

For details and further settings (e.g. matrix monitor set-up), please refer to menu description.

## 7.6. Connection of several keyboards

If several keyboards (max. 8) are used in a system, the RS-485 bus has to be looped through from keyboard to keyboard.



Using both RS-485 interfaces (port 1 and 2), the 2nd bus connection must be effected separately as illustrated above by means of EDA-998 connection kits.

Power supply can be installed either directly at the keyboard or with the included connection box.

## 7.7. Startup

After having finished the installation work, switch on the power.

During initialisation (approx. 3 sec.), the firmware version is displayed.

**Keyboard**  
**Version 1.13**

After initialisation, the following message is displayed:

**CAM:0001 MON:0001**  
**\_\_\_ [ CAM / MON / DVR ]**

## 8. MENU SETTINGS

After electrical installation and start-up, both the connected devices and the keyboard itself have to be set up.

Hold the **Shift** key and press the **Menu** key to enter the keyboard menu.

**COM Port Setting**  
**Device Setting**

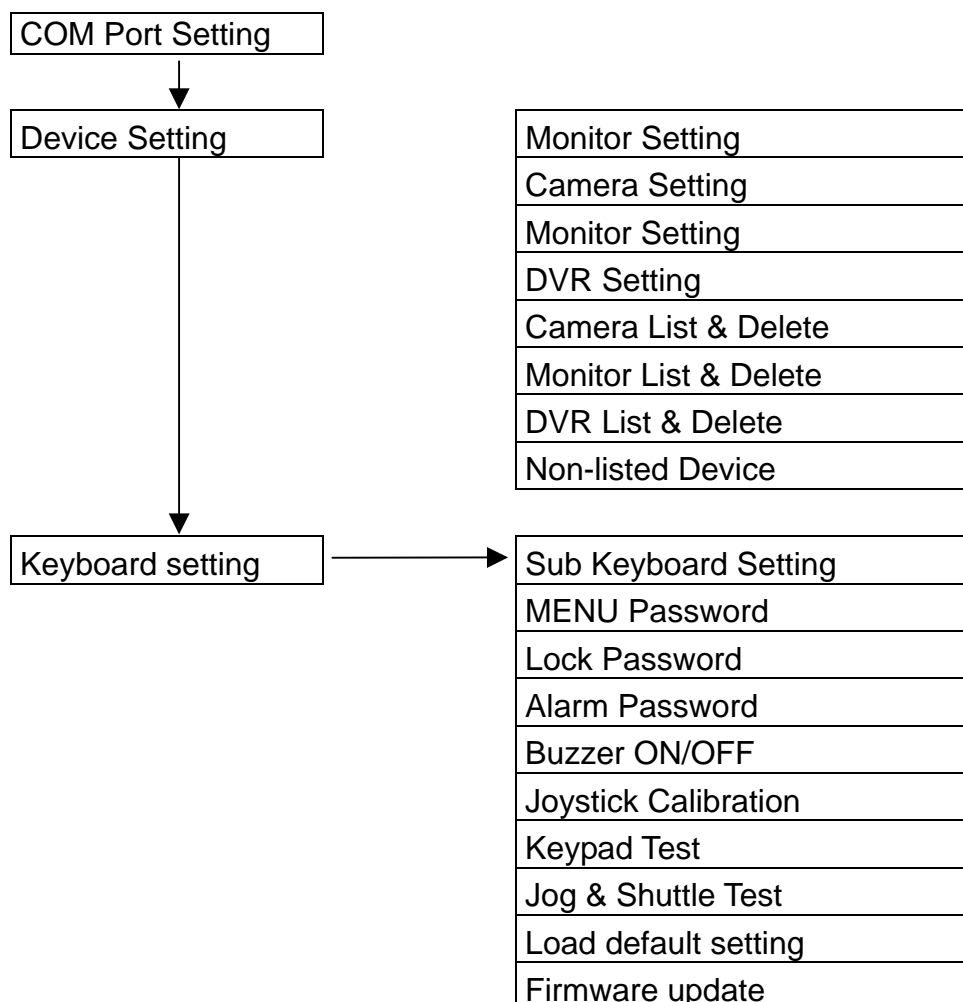
Use the joystick and the **Enter** key for menu navigation. Use the **Esc** key to leave the menu and return from submenus.

The "<" icon at the end of the second line indicated further settings to be effected in this menu. Use the joystick **▼▲** to switch between the lines.

Selected settings are displayed blinking. Press **Enter** to confirm the setting and **Esc** to return to the previous menu level.

### 8.1. Menu structure

The LCD display menu shows the following structure:



## 8.2. COM PORT SETTING - RS-485 interface setting

Define telemetry protocol type and transmission rate in this menu.

MENÜ > COM PORT SETTING > **Enter**  
Select port 1 or 2 and confirm with **Enter**.

Port : \_ ( 1 or 2 )  
Input the port.

Use the joystick▲▼ to change the value.  
Selection: 1200, 2400, 4800, 9600 Baud.  
Press **Enter** to confirm the setting and **Esc** to cancel.

BAUD : 9600 <  
[     ] to change

The next menu is used for telemetry protocol setting.

Use the joystick ▼ ▲ to change the value.

Selection:      EVF-1:            V-Protect Speed Dome  
                  EVF-2:            EverFocus EPTZ series  
                  A-Type:           EverFocus ED2200/2250,  
                                      Samsung SCC-641/643/6405  
  
                  Pelco-D  
                  Pelco-P

Protocol : EVF-1  
[     ] to change

**ATTENTION:** Protocol type setting is irrelevant for EverFocus DVR control; only baud rate setting is relevant!

Press **Enter** to confirm the selection and **Esc** to cancel.

Port : 1 Changed  
[ ENT ] to save

## 8.3. DEVICE SETTING

Connection settings definition for controlled devices.

### 8.3.1. Camera setting

Use this menu to define telemetry cameras and cameras to be assigned to DVR call and matrix monitors.  
Cameras assigned to DVR main monitor do not require these settings.

MENÜ > DEVICE SETTING > CAMERA SETTING > **Enter**

Camera number 1 ~ 9999 (independent of RS-485 address!)

Press **Enter** to confirm the setting and **Esc** to cancel.

Telemetry camera RS-485 address setting.

Enter any idle address for fixed cameras (numeric entry is compulsory).

Press **Enter** to confirm the setting and **Esc** to cancel.

Camera Name : \_ \_ \_ \_

RS485 Address:  
\_ \_ \_ \_



Setup of the RS-485 interface used for telemetry cameras, port 1 or 2.

Enter any value for fixed cameras (numeric entry compulsory).

Press **Enter** to confirm the setting and **Esc** to cancel.

**RS485 Connected to**  
**Port : \_ [ 1 or 2 ]**

Setup of DVR and video input to which the camera is connected (requires a DVR installation in the "DVR Setting" menu)

Enter any value if no DVR is connected

(numeric entry compulsory).

Press **Enter** to confirm the setting and **Esc** to cancel.

**Video Connected to**  
**DVR : \_ \_ \_ \_ CH : \_ \_**

### 8.3.2. Call and matrix monitor setting

Define the DVR call and matrix monitors to be controlled by the keyboard. These settings are irrelevant for main monitor camera management.

Call and matrix monitors can only be managed by EKB 500 after definition in this menu. By this, an administration of system access rights can be set up, as only monitors defined in this menu are available for access.

**MENU > DEVICE SETTING > MONITOR SETTING > Enter**

Monitor number, entry 1 ~ 9999 (independent of DVR monitor number).

Press **Enter** to confirm the setting and **Esc** to cancel.

**Monitor Name : \_ \_ \_ \_**

The following menu item allows the matrix monitor assignment to the respective DVR's call / monitor output.

**Video Connected to**  
**DVR : \_ \_ \_ \_ Matrix : \_ \_**

**ATTENTION:** EDR / EDSR series' monitor numbering:

DVR > EKB-500 input

CALL > Matrix: 1

Matrix 1 > Matrix: 2

Matrix 2 > Matrix: 3

Matrix 3 > Matrix: 4

Matrix 4 > Matrix: 6

Press **Enter** to confirm the setting and **Esc** to cancel.

**Monitor : 0001 changed**  
**[ ENT ] to save**

### 8.3.3. DVR Setting

Define the digital video recorders to be controlled by the keyboard in this menu.

DVRs can only be managed by EKB 500 after definition in this menu. By this, an administration of system access rights can be set up, as only DVRs defined in this menu are available for access.

DVR number, entry 1 ~ 9999 (independent of  
DVR RS-485 address).

Press **Enter** to confirm the setting and **Esc** to cancel.

DVR Name : \_ \_ \_ \_

Setup of the RS-485 interface to which the  
DVR is connected, port 1 or 2.

Press **Enter** to confirm the setting and **Esc** to cancel.

RS485 Connected to  
Port : \_ [ 1 or 2 ]

DVR RS-485 address (complies with the  
DVR menu RS-485 ID).

Press **Enter** to confirm the setting and **Esc** to cancel.

RS485 Address:  
\_ \_ \_ \_

DVR type selection; list of all DVR types  
supported by the keyboard.

Use the joystick **▼▲** to adjust the selection.

DVR Type :  
EDSR1600 <

Press **Enter** to confirm the selection and **Esc** to cancel.

DVR : 0000 set  
[ ENT ] to save

### 8.3.4. Camera List & Delete

This menu contains a list of all installed cameras as well as their settings. Furthermore, cameras can be deleted here.

**MENU > DEVICE SETTING >  
CAMERA LIST & DELETE > Enter**

Total 005 Cameras  
[ ENT ] to view list

After pressing the **Enter** key, the first camera is displayed.

Displays: RS-485: port number address  
DVR: DVR to which the camera is connected  
CH: DVR video input

Name RS485 DVR CH  
0012 2- 0014 0002 03 <

Press **Enter** to delete the camera.

Press **Enter** again to confirm.

Press **Esc** to return to camera list.

Del Camera0000  
[ ENT ] to confirm.

**ATTENTION:** There is no automatic return to the camera list after deleting a camera; pressing the **Enter** key again deletes the following camera.

Press **Esc** to return to camera list.

Use the joystick **▼▲** for camera switching.

Press **Esc** to cancel.

### 8.3.5. Monitor List & Delete

This menu contains a list of all installed monitors as well as their settings. Furthermore, monitors can be deleted here.

**MENU > DEVICE SETTING >  
MONITOR LIST & DELETE > Enter**

**Total 005 Monitors  
[ ENT ] to view list**

After pressing the Enter key, the first monitor is displayed.

Displays: Name:        monitor number  
          DVR:        DVR to which the monitor is connected.  
          CH:         DVR monitor output

**Name DVR CH  
0012 0014 0002 <**

Press Enter to delete the monitor.  
Press Enter again to confirm.  
Press Esc to return to monitor list.

**Del Monitor0000  
[ ENT ] to confirm.**

**ATTENTION:** There is no automatic return to the monitor list after deleting a monitor; pressing the Enter key again deletes the following monitor.  
Press Esc to return to monitor list.

Use the joystick ▼▲ for monitor switching.  
Press Esc to cancel.

### 8.3.6. DVR List & Delete

This menu contains a list of all installed DVRs as well as their settings. Furthermore, DVRs can be deleted here.

**MENU > DEVICE SETTING >  
DVR LIST & DELETE > Enter**

**Total 005 DVRs  
[ ENT ] to view list**

After pressing the Enter key, the first DVR is displayed.

Displays: Name:    DVR number  
          RS-485:   RS-485 address port number

**Name RS485  
0012 1- 0010 <**

Press Enter to delete the DVR.  
Press Enter to confirm.  
Press Esc to return to DVR list.

**Del DVR : 0000  
[ ENT ] to confirm.**

**ATTENTION:** There is no automatic return to the DVR list after deleting a DVR; pressing the Enter key again deletes the following DVR.  
Press Esc to return to DVR list.

Use the joystick ▼▲ for DVR switching.  
Press Esc to cancel.

### 8.3.7. Non-listed devices

This function is currently not supported by RS-485 EEPBus.

Use this menu to approve / disapprove the control of devices not defined in the menu.

**MENU > DEVICE SETTING > NON-LISTED-DEVICE > Enter**

Keep the default setting "No Operation w/o list" at any time, as this function is reserved for future applications only.

**Allow Operation w/o  
list [     ] to toggle**

**No Operation w/o  
list [     ] to toggle**

## 8.4. KEYBOARD SETTING

This menu allows general keyboard and security settings.

### 8.4.1. Sub Keyboard Setting

This menu is reserved for future applications. Keep the default value "0" for keyboard ID and number of sub keyboards even in installations with several keyboards.

**This keyboard ID : 0  
( 0 – 7 , 0 for master )**

**MAX Subkeyboards :  
0 – 7 supported**

### 8.4.2. MENU Password

The setup menu access can be protected by password.

**MENU > KEYBOARD SETTING > MENU PASSWORD > Enter**

Enter an 8-character password.

Press Enter to confirm.

**Input new Password :**

-----

Repeat the password.

Press Enter to confirm.

**Repeat Password :**

-----

For activating the password protection, use the Joystick▼▲ to select "YES" and press Enter to confirm.

**Protect setup menu  
NO < [     ] to change**

If password protection is activated, the setup menu access requires password entry.

**Setup menu password  
set and enabled.**

### 8.4.3. Lock password

If this password is activated, the keyboard will lock after 30 seconds with no keyboard operation. Any keypress after locking will display a password inquiry at the LCD display.

**MENU > KEYBOARD SETTING > LOCK PASSWORD > Enter**

Enter an 8-character password.  
Press Enter to confirm.

**Input new Password :**

-----

Repeat the password.  
Press Enter to confirm.

**Repeat Password :**

-----

For activating the password protection, use the Joystick ▼▲ to select "YES" and press Enter to confirm.

**Enable Lock Password**  
**NO < [     ] to change**

Lock password is active

**Setup menu password**  
**set and enabled.**

### 8.4.4. Buzzer ON/OFF

**MENU > KEYBOARD SETTING > BUZZER ON/OFF > Enter**

Activate / deactivate buzzer.  
Use the joystick ▼▲ for selection and press Enter to confirm.

**Buzzer Enabled**  
**[     ] to toggle**

**Buzzer Disabled**  
**[     ] to toggle**

### 8.4.5. Joystick calibration

**MENU > KEYBOARD SETTING > JOYSTICK CALIBRATION > Enter**

Use this menu for joystick calibration test.

Keep the joystick in idle position and press the Enter key.

**Release Joystick**  
**and press [ ENT ]**

Move the joystick towards all end stops including the third axis (left/right rotation).

**Move joystick**  
**to corners.**

For all X, Y, Z displays, the end stop message must be "OK".

**X+000 Y+000 Z+000**  
**X-000 Y- OK Z-000**

Press Esc to return to menu.

#### 8.4.6. Keypad test

Use this menu for testing the keys' functionality.

**MENU > KEYBOARD SETTING > KEYPAD TEST > Enter**

Press the keys to be checked.

If the keys work correctly, the LCD display shows the key function in clear text.

Press Esc to return to menu.

[ \_\_\_\_\_ ] Pressed  
[ Esc ] to exit

#### 8.4.7. Jog & Shuttle test

Use this menu for testing the jog/shuttle's functionality.

**MENU > KEYBOARD SETTING > JOG&SHUTTLE TEST > Enter**

Move the shuttle (outer ring) towards the left and right end stops. The display shows the 7 shuttle steps; reaching the end stop, the display shows >>>>7 (right end stop) resp. <<<<7 (left end stop).

Turn the jog to the left / right. If the jog works correctly, the display counts from 0 to 9999.

Press Esc to return to menu.

Shuttle : >>>> 5  
Jog : 9934

#### 8.4.8. Load default setting

Use this menu to reset the keyboard to default setting.

**MENU > KEYBOARD SETTING > LOAD DEFAULT SETTING> Enter**

Press Enter to confirm the default setting loading.

Load default setting  
Press [ ENT ] to load.

A second security dialogue appears.

Enter the figures 1, 2, 3 and press Enter to confirm.

Press Esc to cancel and return to menu.

Input 123 to start  
\_\_\_ [ ENT ]

After confirmation, all settings are deleted and the keyboard is reset to default setting. A short buzzer blip confirms the reset.

#### 8.4.9. Firmware update

This function allows the loading of new firmware upon availability. A PC with serial interface and an uncrossed RS-232 connection cable (pin 2, 3, 5 interconnected) is required.

**MENU > KEYBOARD SETTING > FIRMWARE UPDATE> Enter**

A second security dialogue appears.

Enter the figures 1, 2, 3 and press Enter to confirm.

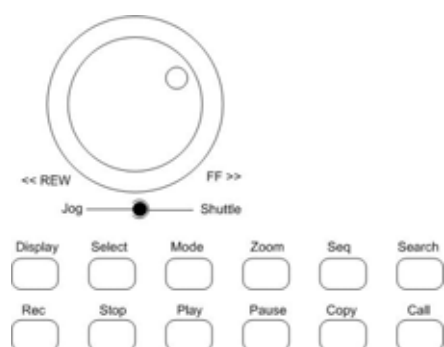
Press Esc to cancel and return to menu.

Input 123 to start  
\_\_\_ [ ENT ]

## 9. OPERATION

### 9.1. DVR operation

EKB-500 provides a separate keypad for DVR control. The keys correspond to the EverFocus DVR front panel keys as regard to labelling and functionality.



Besides these keys, further keys like **MENU** or **Enter** are required for different functions.

**NOTE:** For browsing event list pages of DVR the shuttle ring switches with the first step (~20° movement). Moving the shuttle to the limit may block browsing pages for ~1 second.

**NOTE:** If password protection is active at the DVR, consider the delay of input of number 1, if this is used for password.

#### 9.1.1. DVR selection

Press the **DVR** key. The display shows the last selected DVR (default setting: 1).

Press the **DVR** key again. The DVR number is blinking.

Enter the DVR number and press **Enter** to confirm.

The display changes to the selected DVR number; the DVR can be operated now.

**DVR : 0001**  
**[ CAM / MON / DVR ]**

### 9.1.2. DVR main functions

The range of functions varies, depending on the DVR model and firmware version.

The essential functions are described below; for further details please refer to the DVR manual.

Please note that this description doesn't provide a full function description of the EverFocus DVRs.

Function	Keys / operation
DVR setup menu	<b>MENU</b>
Full screen	Input channel number; key 1 is delayed for approx. 1 second to enable input of channels 10~16
Electronical zoom	<b>Zoom</b> switches ON / OFF (in full screen mode)
Multiscreen display	<b>Mode</b> switches between the available multi screen displays
Record	<b>Rec</b> starts the recording mode manually
Playback	<b>Play</b> starts the playback mode without search
Playback search	<b>Search</b> opens the search menu
Fast forward / reverse playback	<b>Shuttle</b> right (fast forward) resp. left (fast reverse) in 7 steps, depending on shuttle speed
Freeze image playback	<b>Pause</b> freezes the image playback
Freeze image forward / reverse	<b>JOG</b> left (reverse) resp. right (forward)
Stop playback / recording	<b>Stop</b> , first actuation stops the playback, second actuation stops the recording
Main monitor status display	<b>Display</b> switches between the available status displays
Sequence	<b>Seq</b> starts the automatic switching mode
Call & matrix monitor setting	<b>Call</b> enters the setup menu for call and matrix monitors
Multiscreen setup	Press <b>SELECT</b> to modify the individual camera screens within a multi screen by entering the camera number
Video export	<b>Copy</b> opens the image export menu



### 9.1.3. Main monitor (MAIN) operation in DVR mode

The camera and monitor definition within the keyboard menu is irrelevant for the main monitor (MAIN) operation.

As the operation is effected in DVR mode, **CAM** resp. **MON** switching is not necessary.

Select the camera by entering the channel number (DVR video input) via the numeric keypad. Key 1 is delayed for approx. 1 second to enable input of channels 10~16.

All display options available for the respective DVR type are recallable through the keyboard (OSD, multi screen displays).

**ATTENTION:** An additional camera switching by pressing **CAM** > camera number > **Enter** is required for camera pan / tilt / zoom control.

### 9.1.4. Call and matrix monitor operation in CAM-MON mode

**ATTENTION:** The call and matrix monitor operation requires the definition of monitors and cameras controlled by this keyboard in the keyboard menu. The keyboard only accepts camera-monitor combinations connected to one digital video recorder.


#### Camera switching from active DVR mode

Press the **CAM** key, camera number is blinking.

Enter the camera number and press **Enter** to confirm.

Enter the monitor number and press **MON** for Monitor selection.

Camera switching is effected.



CAM : 0001    MON : 0001  
[ CAM / MON / DVR ]

#### Camera switching in active CAM-MON mode

If the keyboard already works in CAM-MON mode, a simplified operation is possible:

##### Syntax:

Camera number > **CAM**

Monitor number > **MON**

If the active camera (indicated in the display) shall also be displayed on other monitors, only the monitor must be entered:

Monitor number > **MON**

## 9.2. SPEED DOME / TELEMETRY RECEIVER OPERATION / SETUP

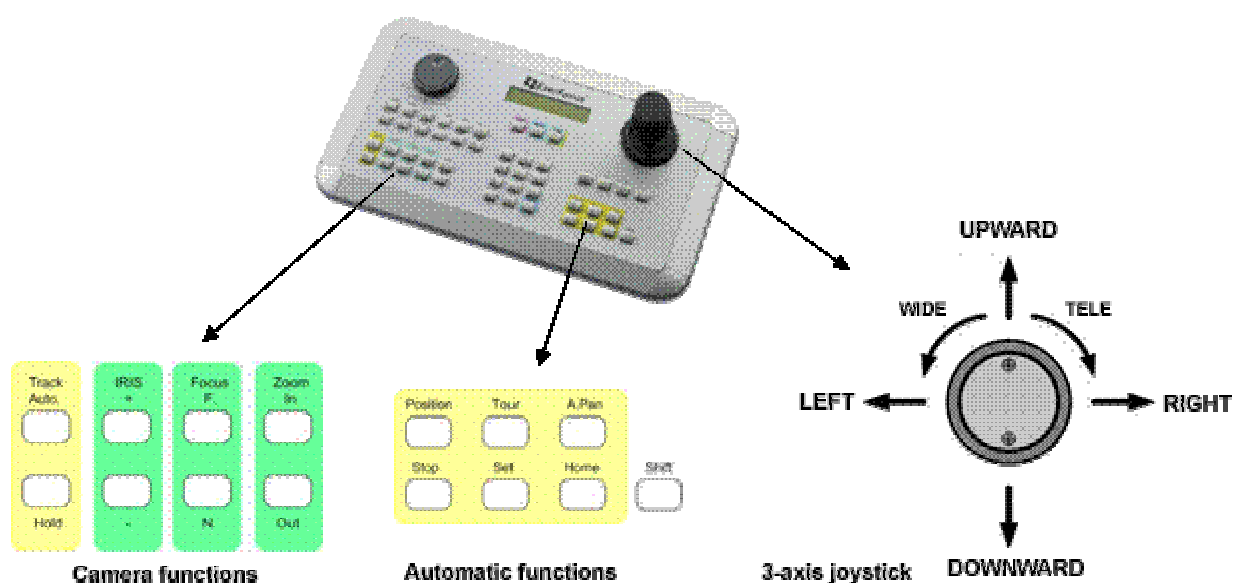
The operation of speed domes and telemetry receivers requires the setup of these devices in the EKB 500 menu. Settings within the following menus have to be adjusted:

**MENU > COM PORT SETTING** for interface and protocol type setting

**MENU > DEVICE SETTING > CAMERA SETTING** for speed dome / telemetry receiver connection settings

EKB 500 is optimised for EverFocus EPTZ series speed dome control. Furthermore, basic functions of other supported speed dome types can be operated.

The following operating elements are available for camera control:



### General key description:

**TRACK AUTO/HOLD:** reserved for future applications

**IRIS + / -:** manual iris control, + opens iris, - closes iris

**FOCUS F. / N.:** manual focus, F. TELE; N. WIDE

**ZOOM IN / OUT:** Zoom keys, same function as joystick rotation, IN = TELE, OUT = WIDE

**POSITION:** start and save positions

**TOUR:** start and save preset tours

**A.PAN:** autopan, start and save automatic pan operation

**STOP:** function key for programming termination

**SET:** switch key for second key level (depending on function)

**HOME:** start and save home position

**SHIFT:** switch key for second key level (depending on function)

## 9.2.1 EverFocus EPTZ series

The following functions are available after camera selection in CAM-MON mode:

**CAM : 0001    MON : 0001**  
**[ CAM / MON / DVR ]**

### EPTZ dome operation outline

Function	Keys / operation
Open dome menu	<b>Shift</b> (hold) + <b>MENU</b>
Switch menu functions	<b>Shift</b> (hold) + <b>JOYSTICK</b> ▼▲
Change menu settings	<b>Shift</b> (hold) + <b>JOYSTICK</b> ←→
Leave dome menu	<b>Clr</b> (hold) + <b>MENU</b> or menu item <b>EXIT</b> > <b>Enter</b>
Pan – Tilt	<b>Joystick</b> ▼▲←→
Zoom TELE / WIDE	TELE: <b>Zoom In</b> or <b>JOYSTICK</b> rotation to the right WIDE: <b>Zoom Out</b> or <b>JOYSTICK</b> rotation to the left
Focus	TELE: <b>Focus F.</b> ; WIDE: <b>Focus N.</b>
Iris +/-	Open iris: <b>IRIS +</b> / close iris: <b>IRIS -</b> .
Start position (preset)	Preset number + <b>Position</b> / <b>Position</b> + preset number > <b>Enter</b>
Save position (preset)	<b>Shift</b> (hold) + <b>Position</b> > preset number > <b>Enter</b>
Preset parametres	<b>Set</b> (hold) + <b>Position</b>
Delete preset	<b>Clr</b> (hold) + <b>Position</b>
Tour mode 1 (one way)	<b>Tour</b> > number > <b>Enter</b>
Tour mode 2 (back and forth)	<b>Shift</b> (hold) + <b>Tour</b> > number > <b>Enter</b>
Setup tour	<b>Set</b> (hold) + <b>Tour</b>
Start autopan	<b>A.Pan</b> > speed 1 ~ 239 > <b>Enter</b>
360° autopan	<b>Shift</b> (hold) + <b>A.Pan</b> > speed 1 ~ 239 > <b>Enter</b>
Setup autopan	<b>Set</b> (hold) + <b>A.Pan</b> , enter start / end
Start home position	<b>Home</b>
Setup home position	<b>Set</b> (hold) + <b>Home</b> , enter position and time definition
Alarm – preset link	<b>F1</b> , enter alarm contact / preset definition
Delete alarm – preset link	<b>Clr</b> (hold) + <b>F1</b> > alarm 1~4 > <b>Enter</b>

### 9.2.1.1. EPTZ on-screen display

Start EPTZ menu:

Switch between the settings:

Change the settings:

Leave the menu:

**MENU**  
**Shift** (hold) + **JOYSTICK** ▼▲  
**Shift** (hold) + **JOYSTICK** ← →  
Menu item **EXIT** > **Enter** or  
**Clr** (hold) + **MENU**

### 9.2.1.2. Positions (presets)

#### Save presets

**Shift** (hold) + **POSITION**  
> enter preset number > **Enter**

Camera:0001 Save to  
Position:\_\_\_[1-192]

#### Define preset parameters

**Set** (hold) + **POSITION**  
> enter preset number > **Enter**

Set Camera:0001  
Position:\_\_\_[1-192]

Enter the preset dwell time within preset-tours  
from 1~239 seconds

> **Enter**

Set Position:001  
Dwell:\_\_\_[1-239]

Preset travel speed from 1 ~ 239 seconds

> **Enter**

Set Position:001  
Speed:\_\_\_[1-239]

Enter a preset name (up to 20 characters)

**JOYSTICK** ▼▲ changes the characters  
**Enter** switches to next character  
**Clr** deletes the current character

Title for position  
\_\_\_\_\_

V  
\_\_\_\_\_

#### Delete preset

**Clr** (hold) + **POSITION**  
> enter preset number > **Enter**

Camera:0001  
Del Position:\_\_\_

## Start preset

**POSITION** > enter preset number > **Enter**

Camera:0001 go to  
Position:\_\_\_[1-192]

### 9.2.1.3. Home position

The home position is the position (preset) which is approached after a pre-defined duration upon last speed dome operation.

**Set** (hold) + **HOME**

> enter inactivity duration 1 ~ 999 minutes

> **Enter**

Back to home if no  
action for \_\_\_Minute

Use the joystick to approach the requested position

> **Enter**

Move to home position  
[ENT] to confirm

Use the **JOYSTICK** ▼▲ to activate the HOME function.

Auto Back Enabled  
[ ] to toggle

### 9.2.1.4. Autopan

#### End stop definition

**Set** (hold) + **A.Pan**

Use the joystick to approach the requested position A,  
enter the dwell time at this end stop in seconds

(1 ~ 239) > **Enter**

Position A  
Dwell:\_\_\_[1-239]

Use the joystick to approach the requested position B,  
enter the dwell time at this end stop in seconds

(1 ~ 239) > **Enter**

Move to Position B  
[ENT] to confirm

Position B  
Dwell:\_\_\_[1-239]

#### Activate A-B autopan

**A.Pan** > enter pan speed 1 ~ 239

> **Enter**

Speed:\_\_\_[1-239]  
[ENT] to start.

#### Activate 360° autopan

A continuous 360° pan operation is also possible.

**Shift** (hold) + **A.Pan**

> enter pan speed 1 ~ 239 > **ENTER**

Speed:\_\_\_[1-239]  
[ENT] to start.

### 9.2.1.5. Preset tours

The EPTZ series supports up to 16 programmable preset tours with up to 16 presets each.

For these tours, 2 operation modes are available:

1) **Mode 1** (One way): after approaching all programmed presets, the tour restarts at the first programmed preset.

Example: 1-2-3-4-5-6 > 1-2-3-4-5-6 > 1-2-3-4-5-....

2) **Mode 2** (back and forth) > after approaching all programmed presets, the speed dome returns to the presets in reverse order.

Example: 1-2-3-4-5-6 > 5-4-3-2-1 > 2-3-4-5-6 > 5-.....

Preset tour programming

**Shift** (hold) + **Tour**

> enter tour number 1 ~ 16 > **Enter**

**Set Camera:0001**

**Tour:\_\_[1-16]**

Enter the presets in correct order (max. 16) .

**Add Position#01:\_\_\_**

**[ENT / STOP]**

Press **Enter** to save and add further preset tours.

Press **Stop** to finish preset tour programming.

**Tour:001 Pos#01:001<**

**[ENT] to save**

**Activation preset tour mode 1 (One way)**

**Tour** > enter tour number > **Enter**

**Camera:0001**

**Run Tour:\_\_[1-16]**

**Activation preset tour mode 2 (back and forth)**

**Shift** (hold) + **Tour** > enter tour number > **Enter**

**Camera:0001**

**Run Tour:\_\_[1-16]**

### 9.2.1.6. Alarm contact settings

This function allows the EPTZ dome alarm contact assignment to presets or preset tours.

Program alarm / preset / tour link

**F1** > enter alarm contact number 1 ~ 4

Link Alarm:\_ [1-4] to  
Position [ ]:\_\_\_\_

Use the **JOYSTICK**▼▲ to switch between preset  
(position) and preset tour (tour)

Link Alarm:\_ [1-4] to  
Tour [ ]:\_\_\_\_

Delete alarm / preset / tour link

**Clr** + **F1** > enter alarm contact number 1 ~ 4  
> **Enter**

Del AlarmLink:\_[1-4]  
[ENT] to confirm

## 9.2.2. EverFocus ED 2200/2250, Samsung EI. SCC-641/643/6405 operation

Required protocol type in "COM PORT SETTINGS": **A-TYPE / SAMSUNG**

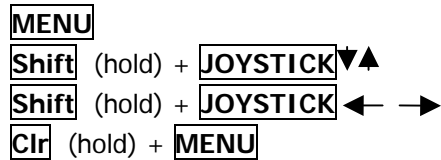
### 9.2.2.1. On-screen display

Start menu:

Switch between the settings:

Change the settings:

Leave the menu:



### 9.2.2.2. Presets

Preset parameters are defined in the dome menu. Please refer to the manual of the respective model.

#### Save presets

**Shift** (hold) + **POSITION**  
> enter preset number > **Enter**

Camera:0001 Save to  
Position:\_\_\_[1-192]

#### Delete preset

**Clr** (hold) + **POSITION**  
> enter preset number > **Enter**

Camera:0001  
Del Position:\_\_\_

#### Start preset

**POSITION** > enter preset number > **Enter**

Camera:0001 go to  
Position:\_\_\_[1-192]

### 9.2.2.3. Home position

The home position is the position (preset) which is approached after a pre-defined duration upon last speed dome operation.

Define the home position within the speed dome's on-screen display. For further details, please refer to the manual of the respective model.

The manual home position start is effected by starting the preset programmed for this function in the dome menu.

The **HOME** key is inactive.



#### 9.2.2.4. Autopan

##### End stop definition

Define both the end stops and the autopan speed in the speed dome's on-screen display. For further details, please refer to the manual of the respective model.

##### Start A-B autopan

**A.Pan** > enter pan speed 1 ~ 239  
(any input, value is irrelevant due to speed being defined in the dome menu)  
> **Enter**

Speed: \_\_[1-239]  
[ENT] to start.

#### 9.2.2.5. Preset tour / Pattern

Define patterns (stored motion sequences of 30 seconds each) in the speed dome's on-screen display. For further details, please refer to the manual of the respective model.

##### Activate pattern

**Tour** > enter pattern number 1~3 > **Enter**

Camera:0001  
Run Tour: \_\_[1-16]

##### Activate Preset Tour

**Tour** > 0 > **Enter**

#### 9.2.3. Pelco-D / -P protocol compatible devices' operation

Required protocol type in "COM PORT SETTINGS": **Pelco-D / Pelco-P** (according to dome / receiver)  
Implemented protocol is based and tested with Spectra III™ series halfduplex RS-485.

Third party domes with implemented Pelco-D protocol may have different features and

**ATTENTION:** Some Pelco-D / -P protocol domes and receivers require an address offset of -1 at the keyboard, i.e. the address assigned to the dome / receiver in the EKB 500 menu must be 1 below the address set in the dome / receiver itself!

#### 9.2.3.1. On-screen display

Start menu:

**MENU**

or **Preset** > 9 5 > **Enter**

Switch between the settings:

**Shift** (hold) + **JOYSTICK**▼▲

Change the settings:

**IRIS +**

Leave the menu:

**EXIT** entry in OSD menu, confirm with **IRIS +**

alternative:

**MENU**

or **Preset** > 9 5 > **Enter**

For exit of some sub-menus the key **IRIS -** is used.

### 9.2.3.2. Presets

#### Save presets

**Shift** (hold) + **POSITION**  
> enter preset number > **Enter**

Camera:0001 Save to  
Position:\_\_\_[1-192]

#### Delete preset

**Clr** (hold) + **POSITION**  
> enter preset number > **Enter**

Camera:0001  
Del Position:\_\_\_

#### Start preset

**POSITION** > enter preset number > **Enter**

Camera:0001 go to  
Position:\_\_\_[1-192]

### 9.2.3.3. Autopan

#### End stop definition

Define both the end stops and the autopan speed in the speed dome's on-screen display. For further details, please refer to the manual of the respective model.

#### Start A-B Autopan

**A.Pan** > enter pan speed 1 ~ 239  
(any input, value is irrelevant due to speed being defined in the dome menu)  
> **Enter**

Speed:\_\_\_[1-239]  
[ENT] to start.

**ATTENTION:** At some third party domes with implemented Pelco-D the Autopan starts with alternative command:

**POSITION** > 99 > **Enter**

### 9.2.3.4. Frame Scan / Preset tour

Frame scan is a modified Autopan mode, the Autopan stops at defined positions for a programmed time. Settings for this are defined in the speed dome OSD manual. At some third party domes with implemented Pelco-D protocol this command starts Preset tour.

#### Start Framescan

**POSITION** > 98 > **Enter**

#### 9.2.3.5. Pattern / Preset Tour

Define patterns, which also can contain a preset tour, in the speed dome's on-screen display. For further details, please refer to the manual of the respective model.

##### Activate pattern

**Tour** > enter pattern number > **Enter**

**Camera:0001**  
**Run Tour:\_\_[1-16]**

**ATTENTION:** At some third party domes with implemented Pelco-D the Preset tour starts with alternative command:

**POSITION** > 98 > **Enter**

## 10. TECHNICAL DATA

Keys	48
Joystick	3-axis
Display	2 lines with 20 characters each
RS-485	2 independent RS-485 ports with 2 RJ-45 sockets each
RS-232	1 x RS-232, Sub-D9 socket (service)
RS-485 protocols	EverFocus, ED2200/2250, Samsung Electr., Pelco-D, Pelco-P
Power source	12 VDC +-10%, via power supply 230 VAC
Power consumption	10 W max.
Ambient temperature	0°C ~ 40°C, non-condensing
Dimensions	360 (W) x 110 (H) x 200 (D) mm
Weight	1,5 Kg

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